Mucool Pump test – Electrical

CD to John Thompson : 06/27/02

Goal:

Install at ER cryo-building the electrical connections (read-out/ control) for the following devices.

- Characterization of the LH2 pump for water flow
- Test in foreword and reverse mode.
- Remote control if possible: ex: Use Kautzky channel (ERKV1R)
- Check the accuracy of the speed read-out with strobe.

Caution:

- Special attention to water/electrically/metal => electrical ground.
- Seal between pump and motor
- Install extension cord from the current motor load cable (wet engine) to the pump.

Materials:

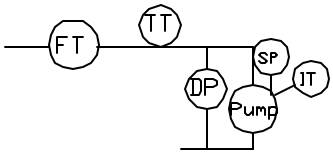
Device	Description	Measurement	Output	Range
Motor driver	2HP			
SP		Motor characteristics	0- 10 V	0-60 Hz
Power/current		Motor characteristics	0 – 10 V	0-1500 W
DPT 1	Setra	Mass-flow	0-5 V	0 – 5 psid
DPT 2	Setra	Differential pressure	0-5 V	0 – 10 psid
Heater	Water	TBD	TBD	0 to 500 W (1kW)
Temperature	Infrared			10 to 100 K

Measurements:

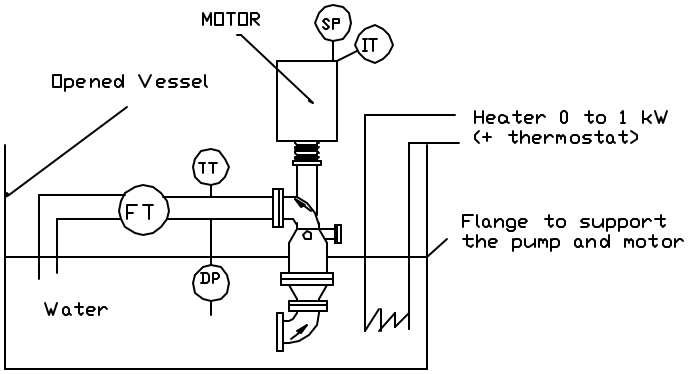
- Variable parameters:
  - Speed // frequency - Ex: (60 Hz 17.60 RPM)
  - Heater for water

- Output:
  - Power (Current)
  - Pressure differential
  - Temperature

Performance measurement of the Mucool test facility Pump



a. Schematic



b. Conceptual design